COVER SHEET

FIRM SIZE EXPECTATIONS OF NASCENT ENTREPRENEURS

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ABSTRACT

The purpose of this paper was to examine the factors affecting the future firm size expectations of nascent entrepreneurs. This was done by testing a decision model on a unique data set composed of a random sample of nascent entrepreneurs. The proposed model is based on four different components that were tested together as well as separately in order to assess their unique and combined effect on size expectations. The four components were: initial human capital, personal/business goals, environmental and business context, and gestation activities. The dependent variables used in this paper reflect the growth trajectories that newly founded firms can take. While it turned out difficult to predict start size, the suggested model could satisfactorily predict expected early growth. The results indicate that those nascent entrepreneurs expecting high growth also expected larger start-size. Their goal was to make the future business their main income source. This was to be achieved by an expansion strategy or by a harvesting strategy.

INTRODUCTION

Business growth and especially early growth is of special importance as they represent one of the major sources of job creation. Several studies have shown that small and medium sized firms play a very large and/or growing role as job creators (Davidsson, Lindmark, & Olofsson, 1996; Davidsson, Lindmark, & Olofsson, 1994; Reynolds & White, 1997; Storey, 1994). In Sweden, this is mainly a result of many small start-ups and their incremental expansions. Thus, new employment opportunities are heavily dependent on the numbers of organizations created and their early growth. New firms can create new job opportunities in two ways: either by their start size, or by their subsequent early growth. Furthermore, we know that there is a substantial variation among firms with regard to both start size and subsequent growth. While the absolute majority of the firms remain small, some firms choose to engage in growth.

It is therefore interesting to examine more closely the expectations of nascent entrepreneurs with regard to expected start size and expected subsequent growth. These expectations, whether they are realized or not, represent the initial ambitions of a population of nascent entrepreneurs. High growth ambitions should, arguably, also lead to higher rate of realization, i.e. larger start-sizes and higher growth rates, compared to lower ambitions. Thus, knowledge about the determinants of growth expectations during the venture creation phase may be central if we want to influence and to support the growth of newly founded firms.

This paper examines what factors affect firm size expectations of nascent entrepreneurs. More precisely, we have used size expectations for the business during the first year of operation and during the fifth year of operation as dependent variables to examine the determinants of growth expectations and performance expectations of nascent entrepreneurs. Hence, our aim is to present and test a decision model of new venture creation where the dependent variable is expected size of the business operation. The model emphasizes the social cognitive process of new venture creation.

PREVIOUS RESEARCH

Early growth. Previous research on early firm size or growth has traditionally focused on actual size during the first years of operation, normally one to five years after the birth of the venture (Arbaugh & Sexton, 1996; Birley & Westhead, 1994; Chandler & Jansen, 1992; Cooper, Gimeno-Gascon, & Woo, 1994; Cressy, 1996; Hansen, 1995). Depending on the adopted perspective on early size variations the literature can be divided into three different theoretical categories. The dominant perspective is related to the individual characteristics of the founder or founders of the business; a perspective which tries to answer the question what personal characteristics affect the early performance of the venture. Examples of such individual characteristics range from biographical data such as age, sex, and experience (Stuart & Abetti, 1990) to cognitive constructs such as perceived competence (Chandler & Jansen, 1992) and personal goals (Birley & Westhead, 1994). The second class is related to contingency variables and their possible affect on early growth. Examples of contingency variables are industry and geographical affiliation (Bull & Winter, 1991), legal entity, and financial capital (Cressy, 1996). The third and the smallest category in terms of published empirical work is concerned with the network's effect on growth. Here the network size and the composition, as well as the frequency of interactions within in, are of interest (e.g., Hansen, 1995).

Regardless of their theoretical point of departure, previous studies share the shortcoming that they are retrospective studies where data on the characteristics the organizational creation process have been gathered after the venture has been launched. The reliance on retrospective data introduces two biases in the data: (a) hindsight biases, i.e., memory distortion of what actually happened, and (b) positive selection biases, i.e., we only have information about those who are up and running the business. It is possible that those that never realized their start-up plans have other growth or size expectations than those actually starting. For example a nascent entrepreneur could abandon a business idea for the reason that it is not in accordance with his or her growth ambitions.

New venture creation. There is in the literature an acknowledged need for studies that try to follow the business creation process and the outcome in real time with a holistic perspective where several dimensions are investigated not separately but jointly (Gartner, 1985; Gartner, Bird, & Starr, 1992; Katz & Gartner, 1988). This study has therefore with some modification adopted Gartner's (1985) framework of four dimensions that should be accounted for when the creation of new ventures is studied. Gartner's (1985) original four dimensions are: i) The individual(s) involved in the new venture creation, ii) the activities undertaken by those individuals during the venture creation, iii) the organizational structure and strategy of the new venture, and iv) the new venture's environmental context.

Our model takes off from Gartner's model in that we see the creation process as a process mirroring the nascent entrepreneur(s) own preferences and the willingness to shape the environment in accordance to them. That is, new venture creation is behavior performed by a single person or a limited group of persons trying to evaluate the possibility to establish a venture

in accordance with their personal preferences and goals (both personal and business goals) (Shaver & Scott, 1991). This behavior can be seen as learning experience, where the nascent entrepreneur enters the process with limited knowledge of the outcome and the process leading to the outcome. Because such processes always have a high degree of newness all nascent entrepreneurs enter the venture creation process independently of whether the entrepreneur is really de novo or has previous start-up experience. The newness can, e.g., be a new business idea or a previously tested business idea to be introduced on a virgin market. The point is that the entrepreneur enters into a process defined only by the willingness to create a business and relatively high degree of uncertainty as regards the final outcome.

As the process evolves the entrepreneurs will have to make decision that will shape the future of the business (e.g., the optimal size of the firm). However, during the process the entrepreneur will accumulate both information and experience. This accumulated experience and new information might lead to the conclusion that previously made decision are no longer valid and that they therefore must changed. This line of reasoning is close to the idea behind dynamic decision making as well as to Weick's (1979) process of 'enactment'. The former perspective focuses on how the individual interacts with a complex situation in order to understand the information around him or her so actions can be taken. The latter perspective focuses more on how information about the reality is shared and organized among a group of people in order to create a common understanding.

Dynamic decision making research (Brehmer, 1992; Brehmer & Dörner, 1993) focuses on decision making which requires a series of decisions, where the decisions are not independent, where the state of the world changes, both autonomously and as a consequence of the decision maker's actions, and where decisions have to be made in real time. For example starting or creating a business can be seen as a series of small incremental decision that may be altered along the way as new information is gathered. Moreover, decision are made in real time and under pressure. There is often a definite time constraint over how long the duration of business gestation may take before the business opportunity disappears. Thus the nascent entrepreneur's decisions and actions are not independent of the changes in the world and the entrepreneur has to adjust. This is a social psychological perspective, where the individual's decision making vis-à-vis the world is the focus.

Weick's (1979) approach focuses on how groups of people interact to create a shared meaning, i.e., focusing on the individual's interaction with others in other to form shared reality about what is happening. Shared realities and how theses realities are created is here the focus. This perspective is central as well as it offers an understanding of how nascent entrepreneurs must convince other people around them to share their view of how great the business idea is. What both theories have in common is the assumption that individuals process or filter information about the present situation based on previous experience. This information gathering might lead to old decisions being viewed in new light and that they therefore are altered.

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Hence, both perspectives are useful for the understanding of new venture creation. We will here focus on how the individual's own cognitive process in relation to goals and actions taken affect the process. According to the proposed social psychological perspective a new venture creation can be seen as made up by three components: i) time, ii) the individual(s) involved and iii) the creation of a business concept. By the concept of time we refer to the entrepreneur's time frame as well as to how far he or she is already in the *process* of creating a business. Hence, there is an individual *acting*, those acts are based on decisions, which in turn are based on the individual's motivation and ability to process relevant information. By business concept we here mean everything needed to be *created* or organized in order to legally operate a

business in accordance with the demands of the market. Thus the behavior of the nascent entrepreneurs is by definition actions taken to test and perhaps launch a venture.

The process of business creation can therefore best be described as an interaction between the preferences and goals of the individual, the evolvement of the project over time where knowledge is accumulated and the on-going refinement of the business conceptualization. These three separate components can be further be broken down in order to be tested empirically. The individual component can be sub-divided into two components, viz. individual human capital and goals, depending on their stability over time and their theoretical distance from the dependent variable.

The *individual human capital* is composed of individual characteristics that tend to be distal to project of creation a venture, and which are stable over time. They represent the set of background variables describing a person biographical data, such as age, sex, education etc. As they are distal we can only expect them to have low to moderate direct impact on behaviors and goals. However, they are also indicators of social background and therefore work as proxies for preferences and goals.

Personal/business goals, on the other hand, represent a conceptually different component. The variables describe the nascent entrepreneur's intention with the future business. Thus they are proximal to the dependent variable as they are conceptually close. They are assumed have a direct causal impact on size expectations, but also to be relatively easily changed in the light of new information.

Environmental and organizational context represent a group of variables describing the context in which the venture creation takes place. It is here assumed that to a certain degree the nascent entrepreneur has the possibility to create his or her own context. The organizational context is created in relation to nascent entrepreneur's own goals and his/her perception of what is feasible and needed. The component is proximal to the dependent variable, but the causality is not clear. The question is whether the nascent entrepreneur creates or selects an organizational and environmental context to fit his or her goals, or whether the context determines the goals.

Stage in the gestation process represents both the time and the actual actions undertaken by the nascent entrepreneur in order to create the new venture. Depending on where in the gestation process the nascent entrepreneur is, he or she will accumulate different sorts of information but also different amounts of information. The nascent entrepreneur will either form stronger opinions about certain issues related to business as confirmatory information is gathered, or s/he will reformulate his or her opinions depending on the information and accumulated experience. Thus, this component is assumed to have a direct impact not only on the dependent variables, but also on business and environmental context and personal goals.

The purpose of the proposed model is to make empirical analysis possible while acknowledging the inherent complexity of venture creation. New venture creation is not a linear process where everything has to be done in a certain way and order. On the contrary, we have argued that the creation process can be seen as the infinite number of interaction among the components describe. These interactions help the entrepreneur to constantly shape and reform the resources needed to launch the venture. We will in no way make this complexity full justice in our empirical analysis. In an attempt to arrive at meaningful and generalizable simplifications of the real-world complexity we focus in this paper our purpose on an exploration of the extent to which the proposed model, composed of four components, can explain expected business size and growth.

METHOD

Design. The study has been designed to provide population estimates for business starts-ups efforts and to make it possible to follow a random sample of nascent entrepreneurs during the time period possibly leading to the start of a new business. Because it was estimated that nascent entrepreneurs constitute a relatively small group in society, a very large sample of individuals went through a screening interview aiming at selecting out the business starters and a control group (a random four percent of the original sample). As a consequence, the vast majority of the respondents only participated in the screening interview. The individuals in the two groups were then asked if they were willing to participate in a longer telephone interview. The intention is to follow the groups at a six month interval during at least a two year period. The interviews reported in this paper were conducted during the period of May-September 1998.

Sample. Table 1 displays the response rate for the present study. Data are based on two samples of randomly selected individuals living in Sweden. The first sample consists of individuals aged between 16-70 years and the second sample consists of individuals aged between 25-44 years. The purpose of the first sample was to get a representative sample of the adult population in Sweden. The purpose of the second sample was to increase the yield of nascent entrepreneurs. We know from earlier statistics that this group has the highest rate of business founders. For all individuals included in the two samples we received information on name, address and birth year.

Of the 49 979 individuals randomly selected, it was possible to obtain a telephone number for 35 971 (71.9%) of the individuals. The remaining 28.1% did not have a telephone number (secret, unknown or other), had severe disabilities (n = 381) or had moved abroad (n = 289). Of those contacted by telephone, 30 427 individuals (84.6 %) agreed to participate.

Nascent entrepreneur. Of the 961 respondents saying that they were at the time of the interview trying to start a business, 623 respondents completed the phone interview. Of the 338 respondents that did not complete the telephone interview, 61 refused or did not have enough knowledge of the Swedish language, and 279 could not be reached again or delayed the appointment for the telephone interview. Of the 623 respondents who completed the phone interview, 405 respondents met the lower and upper bound decision rule to be defined as nascent entrepreneurs. and 90 did not meet the upper or the lower bound rule to be defined as nascent entrepreneur. 128 respondents were defined as nascent intrapreneurs.

The lower bound decision rule was based on twenty-four so called gestation activities. Gestation activities are different behaviours associated with starting a new firm (such as earning money on sales, doing market research, saving money to start a business). The respondents were then asked if they had ‘initiated’ or ‘completed’ each of the gestation activities. They were also asked what month and year all reported actions were initiated. An individual was considered as a nascent entrepreneur if he or she had completed at least one gestation activity by the time of the interview. Only two respondents identified as nascent entrepreneurs in the screening interview were excluded because of the lower bound.

The upper bound is concerned with when start-up process is completed, i.e. when a business is considered as started. The start-up process was considered as completed when the following criteria were fulfilled. A business is regarded as started if a) money has been invested, b) income have been made, and c) the firms is already a legal entity. Our definition of a started

business is similar to the one suggested by Carter, Gartner & Reynolds (1996). They found that nascent entrepreneurs that started a business were faster at establishing a legal entity, getting finance and investing into facilities and equipment, getting sales, and devoting full time to the business. A total of 88 respondents were affected by this upper bound.

Table 1
Sample and response rates

Category	Men	Women	Total
Individuals randomly sampled			49 979
Individuals with identifiable phone number			35 971
Individuals screened	*15 419*	*15 008*	*30 427*
Percentage			84.6%
Percentage Yes to NE, NI item	4.4%	1.8%	3.2%
No. Yes to Nascent entrepreneur or nascent intrapreneur item	*683*	*278*	*961*
Percentage accept invitation to volunteer	2.9%	1.2%	2.0%
No. accepted invitation to volunteer and completed long interview	*445*	*178*	*623*
Refused to volunteer			53
Not enough knowledge of Swedish			6
No contact, not clear if start-up			147
Started, but did not complete interview, because they were no longer starting a business (misunderstanding, changed situation)			132
Nascent intrapreneurs			128
Did not meet the gestation criteria			90
Nascent entrepreneurs analyzed	*294*	*111*	*405*

The dependent variable. Growth expectations was measured in numbers of employees (part time and full time, owner excluded). The time frame was size of the first year of operations and size after the fifth year of operations. Several options are available regarding the calculation of a growth indicator. Sales has the advantage of being closely associated to changes in the market and is therefore a good indicator of market performance. Employment on the other side is associated with job creation, not with market performance as different organizational solutions and industry affiliations will affect its size. As our primary interest in this paper is with new firms ability to create employment, an employment based measure was chosen.

As stated previously, a new firm can create employment either by its start size or by its subsequent growth. In order to acknowledge this fact expected size after year one and growth until year five (expected size after five years minus expected size after one year) were used as dependent variables. It was our original intention to utilize the growth construct developed by Reynolds and White (1997) and applied by Arbaugh and Sexton (1996). The only difference was that we used employment instead of sales as our base for calculation.

The purpose of the Reynolds' growth construct is to develop a typology of different growth trajectories. In order to do that, the entire sample was dichotomized on two dimensions: expected start-size, and expected growth after five years. The start size expectations were divided into a high or a low start-group depending on whether first year employment was above or below

one employee. Thereafter, the sample was divided into a high and a low growth group depending on whether the expected growth rate (expected size year five minus expected size year one) was above or below an increase of two employees. Reynolds choose to combine the two variables into one variable of four different growth categories (high start-low growth, low start –low growth, low start –high growth, and high start –high growth) with the cases quite evenly distributed in the categories.

In our case, the distribution among the four categories was heavily skewed towards the lower end of the categories: low start- low growth accounted for close to 60 percent of the valid cases. The practical consequence was that in a multivariate analysis we would obtain cells with to few cases to complete the analysis. Furthermore, an unnecessarily large number of missing values was introduced in the dependent variable. A third of all cases would have been dropped from the analyses due to missing values in the dependent variable. Missing values were due to a high non-response frequency in size expectation year five. We will come back to this specific problem later.

Instead of using a four category dependent variable we opted for using the two dummy variables (expected start size and expected growth) as dependent variables in separate analysis. Thus we first analyzed determinants of expected start size, and second we analyzed determinants of expected growth. In order to assess the influence of start size ambition on subsequent growth, expected start size was used as a control variable in all analyses of expected growth. The use of two dependent variables in separate analyses provided us with a maximum number of cases and still let us control for different growth trajectories. Table 2 displays the distribution of the dependent variables.

Table 2
Distribution of the dependent variables

Dependent variables	Frequency (N =405)	Percentage (100%)
Expected start size		
0-1 employee	306	75.6%
More than one employee	81	20.0%
Missing	18	4.4%
Expected growth		
0-1 employees	208	51.4%
More than one employee	110	27.2%
Missing	87	21.5%

However, the problem of missing value remained for the expected growth variable. Missing values are always a nuisance as they restrict the statistical power of the analysis. Furthermore they may not be missing completely at random and therefore bias our results. In order to control for the later problem separate missing value analyses were run to test if there was a significant relationship ($p < 0.05$) among the dependent variable's missing values (expected growth) and the exploratory variables. If was found that missing values in the dependent variable was over-represented among those answering they were starting as a team, those with no previous start-up experience, those reporting a low probability for the business to still be running in five years, and those who were in the beginning of the gestation process (short duration of the gestation period). We therefore concluded that respondents early in new venture creation process or otherwise insecure had a higher probability to not respond to what would be the expected size of the business in five years.

Table 3
The constructs used in the analyses.

Construct/ dimensions	Measurement	Conceptual definition
Dependent variables		
Expected start size	Dummy	Value 1= start size larger than 1, 0 = 0 to 1 employee at start
Absolute expected growth	Dummy	Value 1= growth larger than 1, 0 = 0 to 1 employee growth
Initial Human Capital		
a) Age	Scale	A higher score indicates a younger person
b) Education	Ordinal	A higher score indicates a higher education
c) Sex	Dummy	Value 1 = man, 0 = woman
d) Team (dummy)	Dummy	Value 0 =individual start-up, 1 = team start-up
e) Work experience	Scale	A higher score indicates a higher experience
f) Management exp.	Scale	A higher score indicates a higher experience
g) Start-up experience	Dummy	Value 1 = start-up experience, 0 = no experience
Business /Personal goals		
a) Goals	Two dummy variables, three categories	Value 1 = goal to grow as large as possible, 0 = others Value 1 = manageable size, 0 = others
b) Probability of main income source	Scale	A higher score indicates a higher probability
c) Probability of survival	Scale	A higher score indicates a higher probability
Environmental and organizational context		
a) Legal structure	Three dummy variables, four categories	Value 1 = not yet determined, 0= others Value 1 = sole proprietorship, 0 =others Value 1 = partnership, 0 = others
b) Industry affiliation	Dummy	Value 1 = service, 0 = manufacturing
c) Geographical affiliation	Two dummy variables, three categories	Value 1 = Greater Stockholm, 0 = rest of Sweden Value 1 = Rural Sweden, 0 = rest o f Sweden
d) Competition	Scale	A higher score indicates a higher expected competition
Gestation activities		
a) Number of gestation initiated	Scale	A higher score indicates a higher number of initiated activities
b) Number of gestation completed	Scale	A higher score indicates a higher number of completed activities
c) Duration	Scale	A higher score indicates a longer duration
d) Efficiency	Scale	A higher score indicates a longer average time period needed for each completed activity
e) Recency	Scale	A higher score indicates a longer time period since last activity was initiated or completed

Explanatory variables. Table 3 summarizes the constructs used in the paper. The choice of variables is based on previous literature and most of them do not need any further elaboration. However the group of variables composed of different variables assessing the nascent entrepreneurs' business start-up activities will be dealt with in more detail. These variables are based on the more than twenty different gestation activities the respondents were asked about. For each activity the respondent is asked whether the activity is initiated, completed, not relevant. If the behavior is initiated or completed the respondent is asked when the activity was started.

Data thus allowed the construction of variables indicating the number of gestation activities that were either completed or initiated (Carter et al., 1996; Gatewood, Shaver, & Gartner, 1995). Furthermore, using the date for when the activities were initiated, we developed a time frame (measured in months) for the new venture creation process. Three variables were construct based on the time frame. The *duration* of the gestation process was measured as the time elapsed between the first initiated gestation activity and the latest initiated activity at the time of the interview. The second variable is the *recency* of the latest initiated gestation activity measured as the time elapsed between the latest initiated activity and the time of the interview. The last variable is an indicator of *efficiency* in the gestation work. It was measured as the average time taken to complete an activity.

Analysis. Considering the over-all purpose of this paper and the properties of the dependent variables (highly skewed) techniques assuming multivariate normality was not an option. This is however not unique to this study. On the contrary, it has been shown that business performance measures rarely fulfill the needed assumptions to perform, e.g., an ordinary least square regression and that other non-parametric techniques are to be recommended instead (Robinson & Hofer, 1997).

Logistic regression was therefore chosen to assess the determinants of expected start size and expected growth. Forward selection with Wald's statistics was used. Due to the complexity of the proposed model and the large number of variables used, a model selection strategy was adopted. Each variable was first tested in bivariate analysis (not reported here). Second, each category of explanatory variables was tested in separate logistic regressions to assess their impact on the dependent variable. Finally, the strongest variables were selected to be tested in an aggregate model including variables form the different categories of explanatory variables.

RESULTS

The separate models. Table 4 displays the results from the logistic regression analysis for the two different performance measures for each of the four variable categories. The regression coefficients, the base rate, and the predicted correct classification rate are included. Only variables statistically significant ($p < 0.05$) are displayed. The assessment of the model's performance is based on their predictive ability. The predictive ability of the model was here based on the model's ability to correctly classify the cases. The higher the relative increase compared to the base rate, the better is the predictive ability of the model. With no other information than the base rate distribution our best guess is that all cases belong to the largest group. The more a model can beat the base rate the better is the predictive ability of the model. A complication here is that the higher the base rate, the more difficult it becomes to improve the 'blind guess' that every case is a member of the largest group. Therefore, explanatory variables' significant relationships with the dependent variable may be of interest also in the absence of contribution to predictive power.

Two major results can be immediately recognized when examining the regression analyses. Independently of the variable category used it was difficult to predict with any accuracy the expected start size. In contrast, the predictive ability was substantially increased when expected growth was measured. As regards expected growth, the strongest contribution of single variable was start size. It was clear that those planning to start a larger business from the beginning also expected a higher future growth.

The only variable category that could explain some of the variation in start size was the 'Environmental and business context'. The chosen legal structure and choice of the business location had a small but statistically significant impact. All three dummy variables describing the options of legal structure were significant ($p. < 0.05$) with a negative coefficient, indicating that the nascent entrepreneurs planning to start a business a legal corporation also were more prone to start as larger firm. Recent results on the relationship between legal form and the actual growth of young firms indicate that this relationship is quite strong (Dahlqvist, Davidsson & Wiklund, 1999). The geographical affiliation was also of importance, where nascent entrepreneurs active in the Greater Stockholm area were more oriented towards larger firms (i.e., having more than one employee).

For expected growth was much easier to enhance prediction with the help of the explanatory variables. Expected start size was used as a control variable and was the single strongest predictor in all four regressions. The models were easy to interpret in the sense that the variables' individual contribution and sign were in the expected direction. When examining the contribution of the 'Individual human capital' we could see that men, those with previous start experience, and those expecting larger start size are more prone to expect a higher growth.

The 'personal /business goals' analysis indicated that nascent entrepreneurs planning to either grow their business as large possible or to sell it of as soon it is up and running also expected more growth. Furthermore, those expecting the future business to become the main income source were also more growth oriented. This is not self-evident, as a substantial share of the nascent entrepreneurs are already business owners. The picture emerging here is that those nascent entrepreneurs that were most committed to their business venture in terms of an income generator rather than as a part-time effort also expected to grow more, both at an early stage and in a later stage. This picture was even more reinforced when the impact of the 'business and environmental context' was examined. We could see as in the case with expected start size that firms expected to start as incorporation were also correlated with higher growth ambitions. This can be seen as seen as an indicator of financial commitment as incorporation is the most expensive form of legal form.

As regards 'gestation activities' we can see that the further the nascent entrepreneur as come in the gestation process (controlling for start size) the higher were the growth ambitions. The careful reader will note that number of completed activities has a negative sign, whereas number of initiated activities has a positive sign. This was caused by the two variables high inter-correlation, i.e., the higher the number of initiated activities the higher the number of completed activities. Therefore the model was re-tested with only one of the two variables and then the sign came out as positive for both regressions.

To sum up this section, we conclude that independently of the used variable category it was not possible to satisfactorily predict the variation in expected start size. We found some statistically significant relationships, but their impact on predictive power was very weak. Prediction of expected future growth was more easily improved, due in part to the lower 'base rate' and in part to the strong predictive power of expected start size which was used as a control

variable in all four regressions. The four variable categories had similar predictive power, but both 'Business and environment context' and 'Gestation activities' had a somewhat higher predictive power. What came out as the main theme in the different analyses was that the nascent entrepreneurs committed to their business, both financially and emotionally, also expected to achieve the larger start size and higher future growth.

Table 4a
Logistic regression analysis results for separate models. Expected start size is the dependent variable.

Expected start size	Individual Human Capital, N = 369	Personal/ Business Goals, N = 351	Business and Environmental context, N = 372	Gestation Activities, N =382
Variables included in the model	Constant - 2.09 Team start 1.12	Constant - 0.36 Man. Size - 1.39	Constant – 0.28 Not yet -1.47 Partnership – 1.44 Sole prop. – 2.29 Reg. Stockholm 0.60	Constant –2.61 No. of initiated activities 0.14
Base rate Correct classification rate	294/ 75 (79.70%) 79.70%	281/70 (80.06%) 80.06%	293/79 (78.76%) 79.57%	301/81 (78.80%) 78.80%

Table 4b
Logistic regression analysis results for separate models. Expected growth is the dependent variable.

Expected growth	Individual Human Capital, N = 307	Personal/ Business Goals, N = 294	Business and Environmental context, N = 305	Gestation Activities, N = 313
Variables included in the model	Constant - 2.89 Sex 0.66 Start experience 0.90 Exp. start size 1.91	Constant - 1.32 Man. Size - 0.87 Main income source 0.01 Exp. start size 2.17	Constant Not yet -1.47 Partnership – 2.13 Sole prop.-1.81 Exp. start size 1.76	Constant – 2.85 No. of comp. Act. – 0.42 No. of init. Act. 0.54 Exp. start size 2.11
Base rate Correct classification rate	204/ 193 (66.45%) 74.27%	193/ 101 (65.65%) 73.81%	198/197 (64.92%) 77.05%	206/107 (65.81%) 75.72%

The aggregate models. Table 5 displays the results of the logistic regression analyses for the aggregate models. It was concluded that the final models only could offer a relative little increase in the overall predictive ability. However, they achieve better classification rates within the cells. That is, a model can achieve a high overall correct classification rate either by having a low incorrect classification rate in the largest group, but high incorrect classification rate in the smallest group, or by having an even correct classification rate in all cells.

Two groups of variables were excluded entirely in the aggregate models. They were 'initial human capital' and 'Gestation activities'. It was expected that the former group would have a weaker impact on the dependent variables as this group represented variables that are supposedly distal according to our proposed model. However, the exclusion of the 'gestation activities' came as a surprise. In our proposed model it was argued that the stage in which the

nascent entrepreneur is would affect the notion of expected size. We did not find any support for this when all variable categories were tested against each other in the aggregate models.

We did find that the 'business and environment context' and 'Personal/business goals' were able to predict variation in both dependent variables. As variable groups they represent proximal variables, i.e., close to the dependent variables in their theoretical construct. 'Personal/ business goals' represent a number of variables describing motivational aspects of the specific business setting. It was therefore expected that they would have a moderate to high predictive ability. The same line of reasoning is valid for the 'Environmental and business context' variable group. These variables are also specific to the situation of the business creation, and it is only natural that the nascent entrepreneur matches his or her size expectations with business and environmental context. Part of the process of venture creation is to construct an organizational context matching the ambitions of the entrepreneurs with the demands of the situation.

More specifically, the results indicated that nascent entrepreneurs expecting a larger start size preferred incorporation as a legal structure for their firm. Furthermore they stated the explicit goal of either growing the business as much as possible or get it up and running and then sell it off. The same pattern was repeated and even magnified in the sense that the model performed better when expected growth was analyzed. Once more the use of expected start size as control variable had a strong influence on the models predictive ability. Nascent entrepreneurs expected higher growth in their future business if they expected to start as 'large' (i.e., more than one employee) and if they choose incorporation as legal structure. Furthermore, a goal with the future business was to represent the main income source. Once more, commitment to the business stands out as the main difference between the investigated group and their future growth ambitions.

Table 5.
Logistic regression analysis results for aggregate models

	Expected start size, N =370	Expected growth, N = 291
Variables included in the model	Constant 0.73 *Business and Environmental context* Not yet – 1.51 Partnership – 1.46 Sole prop. –2.25 *Personal/ Business Goals* Manageable Size –1.11	Constant 0.22 *Business and Environmental context* Not yet – 1.13 Partnership –2.21 Sole prop.- 1.80 *Personal/ Business Goals* Manageable Size – 0.98 Main income source 0.01 *Control variable* Exp. start size 1.67
Base rate	290/80 (78.38%)	190/101 (65.29%)
Correct classification rate	79.73%	80.07%

In short, the aggregate models performed somewhat better than the separate models which was expected. However, the increase in predictive ability was marginal compared to the analysis for separate variable categories in table 4. As regards expected start size the model is also a very minor improvement over the 'blind guess' that all cases belong to the 'small' (0-1 employees) group. However, when the group sizes are as uneven as in this case it takes a very strong model to beat that naive guess.

CONCLUSIONS

The purpose of this paper has been to examine the factors affecting the firm size expectation of nascent entrepreneurs. This was done by testing a decision model on a unique data set composed of a random sample of nascent entrepreneurs. The proposed model was based on four different components that were tested together and separately to assess their unique and combined effect on size expectations.

The dependent variables used in this paper reflected the employment growth trajectories that newly founded firms can take. New firms total job creation is a result of their start size or their subsequent early growth, or a combination of the two. It was found that most of the nascent entrepreneurs had low size and growth ambitions. More than 79 percent did not expect to have more than one employee after the first year, and more than 65 percent did not expect to have more than one employee after five years of operations.

The prediction of variations in expected start size turned out to be difficult to improve with the explanatory variables used here. When the model's components were analyzed separately none of the components offered an increase in the predictive ability compared to the base rate. Even if results were some what weak, the significant relationships made sense and were easily interpreted. 'Environmental and organizational context' contributed to the highest number of correctly classified cases. Prediction was only marginally increased when the several variable categories were tested jointly.

Our model for prediction of variations in expected growth was much more successful. However, much of the explained variance was attributed expected start size which was used as a control variable in the analyses. When the model's separate components were analyzed, they all yielded similar increases in correct classification rates compared to the base rate. Prediction was only marginally increased when the aggregate model was tested.

The emerging picture was that a set of indicators that can be interpreted as reflecting the nascent entrepreneurs' level of *commitment* (incorporation, expectation that the business will become main source of income, growth as explicit goal, No. of gestation activities) to the business start-up at this early stage has some predictive ability with regard to the dependent variables we have used. This reinforces the image one gets from results concerning going from nascent entrepreneur to actual start-up (Carter *et al.*, 1996) and the actual early growth of new firms (Dahlqvist *et al.*, 1999). Thus, 'early stage level of commitment' seems to be a useful concept for discussion and understanding the outcomes of start-up efforts.

Otherwise, the main conclusion from research must be that our ability to predict the subsequent development of business start-ups is very limited. Our results can be interpreted as suggesting that this is to a large extent because the nascent entrepreneurs themselves do not know very precisely at this early stage what they want their firms to become. The strategy to assess a number of presumably relevant 'factors' or 'conditions' at one point in time in order to 'pick winners' seems to have very limited potential. It is unlikely that increasing the list of explanatory variables or perfecting their measurement would dramatically change that conclusion.

Instead, we would argue that a much more dynamic view is needed in order to further our understanding of business start-ups and our ability to build, as opposed to pick, winners. Both the motivation and the ability to grow the firms are likely to evolve as a consequence of the experiences the (nascent) entrepreneur encounters during the early development. In order to reach further in developing empirical and conceptual knowledge about these important matters we need

to find novel ways to collect and analyze real-world data with all its idiosyncratic properties and temporal complexities, without surrendering to saying that all we can learn is that reality is complex, because that we knew from the very beginning. This study has shown that is possible to obtain a large random sample of business start-ups in real time. In our continued work we will follow the development of these start-up efforts in the hope that we can find more fruitful ways to analyze and conceptually portray their development over time in ways that really take the process perspective seriously

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